



JUN 30 1986

NEWBURGH ROAD
HACKETTSTOWN, NEW JERSEY 07840 USA
(201) 852-1122
TELEX 685337 AMERACE or 136435 HACK



June 25, 1986.

Mr. Larry Lumek
Ecology and Environment, Inc.
111 West Jackson Boulevard
Chicago, Illinois 60604

Re: Stetzer Road Landfill
R05-8601-15/0H 0423
OHD 980610869

Dear Mr. Lumek:

We have received your letter dated June 19, 1986, and the U.S.E.P.A. letter of introduction. You have our permission to visit the landfill site to perform your inspection and testing.

As you requested, enclosed is a copy of the engineering report on teh subject landfill prepared by Floyd Browne Associates, Limited, under contract to Amerace Corporation.

Please feel free to call me if I can be of further assistance.

Sincerely,

Arthur Siemerling
Arthur Siemerling
Corporate Facilities Manager

AS/cwg
Enclosure

- ① Detection limits too high.
- ② RCRA parameter limits are used here for comparison and are different from CERCLA.

AMERACE CORPORATION

SWAN RUBBER COMPANY
LANDFILL
BUCYRUS, OHIO
SITE EVALUATION

MAY 1986



AQUA TECH

BLOOMFIELD
ENVIRONMENTAL
ASSOCIATES
INC.

AMERACE CORPORATION

**SWAN RUBBER COMPANY
LANDFILL
BUCYRUS, OHIO
SITE EVALUATION**

MAY 1986



**FLOYD
BROWNE
ASSOCIATES,
LIMITED**

P.O. BOX 587, 181 S. MAIN ST., MARION, OHIO 43302 (614) 383-2187

AQUA TECH
ENVIRONMENTAL
CONSULTANTS, INC.

Amerace Corporation
1712-01

May 28, 1986

Mr. Arthur Siemering
Corporate Facilities Manager
Amerace Corporation
Newburgh Road
Hackettstown, NJ 07840

Dear Mr. Siemering:

Subject: Swan Rubber Company Landfill, Bucyrus, Ohio

In accordance with your request for engineering services, we are pleased to submit the results of investigations conducted at the inactive Swan Rubber Company Landfill near Bucyrus, Ohio.

The landfill is located between State Route 96 and the Sandusky River in Liberty Township, Crawford County, approximately three miles east of Bucyrus. An area of approximately nine acres was filled at the site with fill material being predominately scrap rubber. Filling operations were ceased and the landfill was closed in the early 1970's.

Floyd Browne Associates, Limited (FBA), was contracted by Amerace Corporation to perform an investigation of the site to determine if any contaminants are migrating from the site. This investigation consisted of obtaining soil borings at five locations and leachate samples from three locations at the downgradient face of the landfill. Enclosure No. 1 shows a general site plan and the location of soil borings and leachate seeps.

Soil borings were made with 6-inch hollow stem augers to a depth of 15 feet (ft). At 5-ft intervals, a 24-inch long, 2-inch diameter (diam) split spoon sampler was used to obtain a sample of subsurface material. A log showing the subsurface stratigraphy at each boring is included in Enclosure 2. Soil samples from depths of 5, 10, and 15 ft were analyzed for cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), zinc (Zn), and priority pollutant volatile organic compounds.

Mr. Arthur Siemerling
Hackettstown, NJ
May 28, 1986
Page 2

Three leachate seeps were located and samples obtained from each. Each leachate sample was analyzed for suspended solids (SS), chemical oxygen demand (COD), pH, Cd, Cr, Cu, Pb, Hg, Ni, Zn, and priority pollutant volatile organic compounds.

All soil and leachate samples were analyzed by Aqua Tech Environmental Consultants, Inc. (ATEC), a wholly owned subsidiary of FBA. Enclosure 3 presents the results of metals analyses for Bores A, B, C, D, and E. Enclosure 4 presents the results of analyses for volatile organic compounds for Bores A, B, C, D, and E. Enclosure 5 presents the results of metals, SS, and COD analyses for leachate samples AL8601, AL8602, and AL8603. Enclosure 6 presents the results of analyses for volatile organic compounds for leachate samples AL8601, AL8602, and AL8603.

The State of Ohio has no guidelines pertaining directly to the assessment of inactive solid waste disposal facilities. For the purpose of evaluating the leachate samples, the analytical results were compared to Ohio Water Quality Standards (OAC 3745-1 through 3745-14) for surface waters. The surface water criteria for the parameters of concern at the site are as follows:

<u>Parameter</u>	<u>Maximum Allowable Concentration (ug/l)</u>
Cd	12
Cr	100
Cu	60
Pb	30
Hg	0.2
Ni	250
Zn	250

A review of the analytical data for leachate samples AL8601 and AL8603 in Enclosure 5 indicates that lead and zinc concentrations significantly exceed the Ohio Water Quality Standards for these parameters. However, it should be noted that the leachate seeps are intermittent depending upon weather and seasonal conditions and are estimated to discharge at a rate of less than 0.5 gallons per minute (gpm). These seeps should have no significant impact on the water quality of the Sandusky River. ←

There are no standards which can be used to evaluate soil contamination. As a "rule-of-thumb," 100 times Primary Drinking Water Standards (PDWS) has been used as a basis for determining whether a soil sample is considered "clean." Primary Drinking

Mr. Arthur Siemering
Hackettstown, NJ
May 28, 1986
Page 3

Water Standards as set forth in 40 CFR 141 and 100 times this value for parameters of concern at the site are as follows:

<u>Parameter</u>	<u>Primary Drinking Water Standards (mg/l)</u>	<u>100 Times PDWS (mg/kg)</u>
Cd	0.010	1.0
Cr	0.05	5.0
Cu	*	*
Pb	0.05	5.0
Hg	0.002	0.2
Ni	*	*
Zn	*	*

*No limitation.

A review of the soil sampling data in Enclosure 3 indicates that except for Bore A the metals concentrations are not significantly greater than the "allowable limits." Bore A is not representative of true soil conditions since it was made directly into the landfill. There is little variation in concentration between the soil samples at buried depths. Based upon this, it does not appear that contaminants are migrating into the underlying soil.

The volatile organic compound analyses as presented in Enclosures 4 and 6 indicate that there were no volatile organic compounds detected in the soil or leachate. There was an insignificant amount of 1,1-dichloroethane in the leachate samples.

The data collected during this investigation indicate that there is no significant migration of contaminants from the site. However, our inspection of the site revealed that there is potential to create leachate at the site due to surface drainage and ponding of rainwater. To mitigate the potential for leachate generation and off-site migration of contaminants, the site should be graded to minimize the percolation of rain and surface water through the fill area.

Amerace Corporation should be aware that this site evaluation does not meet the existing regulations for closure of a solid waste facility. To comply with current regulations, a more thorough evaluation would be required.

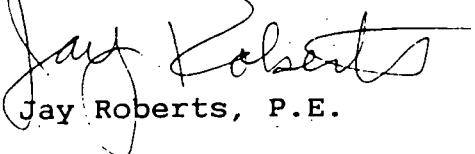
LANDFILL CLOSED IN 1970 - 1971
and

Mr. Arthur Siemering
Hackettstown, NJ
May 28, 1986
Page 4

FBA appreciates this opportunity to be of service to Amerace Corporation. Should you have any questions, please contact us.

Sincerely,

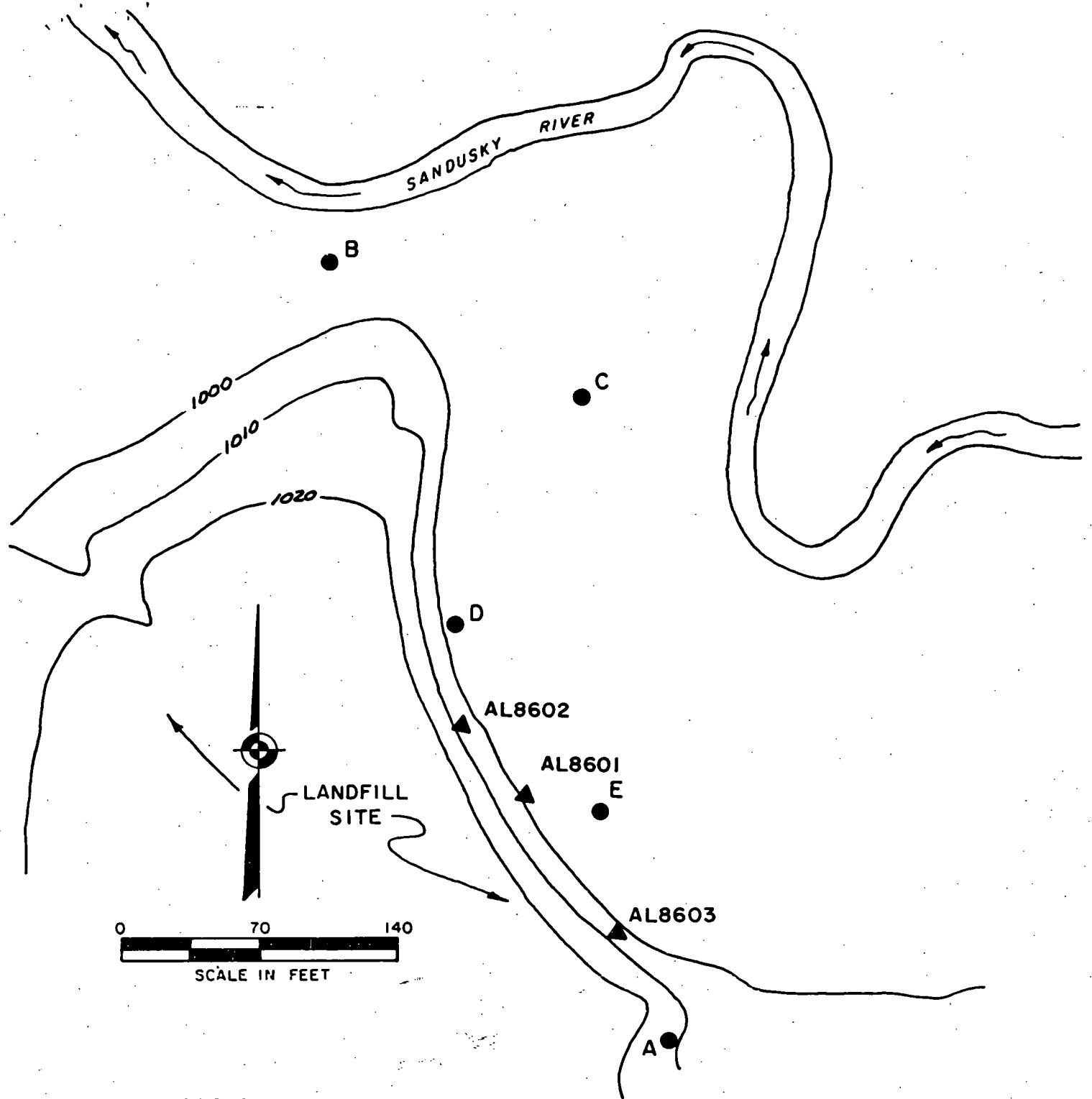
FLOYD BROWNE ASSOCIATES, Limited


R. Jay Roberts, P.E.

paf

Enclosures

ENCLOSURE 1



LEGEND

- ~~1000~~ CONTOUR LINE
- TEST BORING
- ▲ LEACHATE SAMPLE

**AMERACE CORP.
SWAN RUBBER CO.
LANDFILL
BUCYRUS, OHIO
SITE PLAN**
 Floyd Browne Associates, Limited
 Consulting Engineers-Planners Marion, Ohio
PLATE I

ENCLOSURE 2



**FLOYD BROWNE
ASSOCIATES, LIMITED**

BORING LOG

TEST HOLE BORE A PROJECT AMERACE CORP. JOB NO. 1712-01

LOCATION ABANDONED SWAN RUBBER LANDFILL (EAST SIDE) DATE DRILLED April 23, 1986

SURFACE ELEVATION NM WATER LEVEL NM DATE MEASURED _____

ELEV. (FT.)	DEPTH (FT.)	LOG	SAMPLE	BLOW COUNT	DESCRIPTION
			NO.		
	0				Organic-rich humus containing plant roots (Topsoil)
	1.1				Hard brown clay; probably cap material
	1.6				
	5	1	SS	7-3-4	Fill material consisting of rubber hoses, gaskets, cardboard boxes, wood, and metal wire.
	10			9-7-6	
	15	2	SS	Not Measured	



FLOYD BROWNE
ASSOCIATES, LIMITED

ANNA TECOS
ENVIRONMENTAL CONSULTANTS, INC.

BORING LOG

TEST HOLE BORE B PROJECT AMERACE CORPORATION JOB NO. 1712-01

LOCATION ABANDONED SWAN RUBBER LANDFILL (SEE MAP) DATE DRILLED April 23, 1986

SURFACE ELEVATION NM WATER LEVEL 8.5' DATE MEASURED April 23, 1986

ELEV. (FT.)	DEPTH (FT.)	LOG	SAMPLE		BLOW COUNT	DESCRIPTION
			NO.	TYPE		
	0					Organic-rich material containing plant roots/fragments
	5		1	SS	1-2-2-3	Clay (brown); contains silt/sand throughout
	7					Gray sand; contains some silt
	10	0000	2	SS	2-3-3-5	Clay (brown); contains silt/sand in places Water at 8.5'
	15					Gravel (dense); contains clay Sand
	16.5		3	SS	3-5-7-12	Pure dense gray clay



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ENVIRONMENTAL
CONSULTANTS, INC.

BORING LOG

TEST HOLE BORE C PROJECT AMERACE CORPORATION JOB NO. 1712-01
LOCATION ABANDONED SWAN RUBBER LANDFILL (SEE MAP) DATE DRILLED April 23, 1986
SURFACE ELEVATION 54' WATER LEVEL 9.0' DATE MEASURED April 23, 1986

ELEV. (FT.)	DEPTH (FT.)	LOG	SAMPLE		BLOW COUNT	DESCRIPTION
			NO.	TYPE		
	0					Organic-rich material (Topsoil)
	5		1	SS	1-1-2-2	Clay (brown); contains silt/sand throughout
	7					Gray Sand; contains some silt
	10		2	SS	3-2-3-6	Dense gravel; contains some clay Water at 9.0'
	15		3	SS	5-6-7-10	Pure dense gray clay



FLOYD BROWNE
ASSOCIATES, LIMITED

ANNUAL REPORT
ENVIRONMENTAL CONSULTANTS, INC.

BORING LOG

TEST HOLE BORE D PROJECT AMERACE CORPORATION JOB NO. 1712-01
LOCATION ABANDONED SWAN RUBBER LANDFILL (SEE MAP) DATE DRILLED April 23, 1986
SURFACE ELEVATION NM WATER LEVEL 6.5' DATE MEASURED Apr. 23, 1986

ELEV. (FT.)	DEPTH (FT.)	LOG	SAMPLE		BLOW COUNT	DESCRIPTION
			NO.	TYPE		
0						Organic-rich material (Topsoil)
5			1	SS	2-2-3-2	Clay (brown); contains silt/sand throughout
7						Sand (gray); Contains some silt; Water at 6.5'
8						? Contact Unclear
10			2	SS	1-1-1-7	Brown/gray mottled clay
						Brown sand; contains some gravel
15			3	SS	7-10-12-17	Stiff fine-grained gray sand; very dense and moist; contains some silt



FLOYD BROWNE
ASSOCIATES, LIMITED

AMERICAN
ENVIRONMENTAL
CONSULTANTS INC

BORING LOG

TEST HOLE BORE E PROJECT AMERACE CORPORATION JOB NO. 1712-01

LOCATION ABANDONED SWAN RUBBER LANDFILL (SEE MAP) DATE DRILLED April 23, 1986

SURFACE ELEVATION NM WATER LEVEL 10.0' DATE MEASURED April 23, 1986

ELEV. (FT.)	DEPTH (FT.)	LOG	SAMPLE		BLOW COUNT	DESCRIPTION
			NO.	TYPE		
	0					Organic-rich material (Topsoil)
	5		1	SS	2-3-4-4	Clay (brown); contains silt/sand throughout
	10		2	SS	4-7-11-10	Water at 10.0' Wet sand and gravel; loose
	15		3		4-8-11-14	Stiff fine-grained gray sand; very dense and moist; contains some silt

ENCLOSURE 3



AQUA TECH
ENVIRONMENTAL CONSULTANTS, INC.

ENVIRONMENTAL
CONSULTANTS INC P.O. Box 76, Melmore, Ohio 44845 419-397-2659 or 397-2222
P.O. Box 436, 181 South Main Street, Marion, Ohio 43302 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986
DATE REP'D. 05-01-1986 P.O. # +---++

LAB NO. 1924-86
CLIENT NO. F0003

SAMPLE LOCATION BORE A (5')
SAMPLED BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 11:30

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	51.1	%	04-25-1986
01027	CADMIUM, TOTAL, CD	2.9	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	18	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	12	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	290	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.20	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	18	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	680	MG/KG	04-25-1986

LABORATORY CERTIFICATION # 4053

SIGNED Peter J. Gould

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302, 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	P.O. #	++++++	LAB NO.	1925-86
DATE REP'D.	05-01-1986			CLIENT NO.	F0003
SAMPLE LOCATION	BORE A (10')			DATE SAMPLED	04-23-1986
SAMPLED BY	MATT KNECHT			TIME SAMPLED	11:30
R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL	COMMENTS:				
STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS	
00500	RESIDUE, TOTAL (TS)	43.2	%	04-25-1986	
01027	CADMIUM, TOTAL, CD	1.8	MG/KG	04-25-1986	
01034	CHROMIUM, TOTAL, CR	20	MG/KG	04-25-1986	
01042	COPPER, TOTAL, CU	14	MG/KG	04-25-1986	
01051	LEAD, TOTAL, PB	93	MG/KG	04-25-1986	
71900	MERCURY, TOTAL, HG	0.31	MG/KG	05-01-1986	
01067	NICKEL, TOTAL, NI	7	MG/KG	04-25-1986	
01092	ZINC, TOTAL, ZN	3880	MG/KG	04-25-1986	

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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 LAB NO. 1926-86
DATE REP'D. 05-01-1986 P.O. # +----+ CLIENT NO. F0003
SAMPLE LOCATION BORE A (15') DATE SAMPLED 04-23-1986
SAMPLED BY MATT KNECHT TIME SAMPLED 11:30

R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL		COMMENTS:		
STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	75.2	%	04-25-1986
01027	CADMIUM, TOTAL, CD	<0.70	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	13	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	22	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	16	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.11	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	36	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	110	MG/KG	04-25-1986

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302, 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 P.O. # +---++
DATE REP'D. 05-01-1986

LAB NO. 1927-86
CLIENT NO. F0003

SAMPLE LOCATION BORE B (5')
SAMPLER BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 12:55

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	81.6	%	04-25-1986
01027	CADMIUM, TOTAL, CD	<0.60	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	6	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	9	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	3	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	0.65	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	16	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	46	MG/KG	04-25-1986

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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 LAB NO. 1928-86
DATE REP'D. 05-01-1986 P.O. # +++++ CLIENT NO. F0003
SAMPLE LOCATION BORE B (10') DATE SAMPLED 04-23-1986
SAMPLER BY MATT KNECHT TIME SAMPLED 12:55

STORET		ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	85.8	%		04-25-1986
01027	CADMIUM, TOTAL, CD	<0.70	MG/KG		04-25-1986
01034	CHROMIUM, TOTAL, CR	7	MG/KG		04-25-1986
01042	COPPER, TOTAL, CU	20	MG/KG		04-25-1986
01051	LEAD, TOTAL, PB	6	MG/KG		04-25-1986
71900	MERCURY, TOTAL, HG	<0.07	MG/KG		05-01-1986
01067	NICKEL, TOTAL, NI	26	MG/KG		04-25-1986
01092	ZINC, TOTAL, ZN	55	MG/KG		04-25-1986

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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986
DATE REP'D. 05-01-1986 P.O. # +---++

LAB NO. 1929-86
CLIENT NO. F0003

SAMPLE LOCATION BORE B (15')
SAMPLER BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 12:55

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	82.9	%	04-25-1986
01027	CADMIUM, TOTAL, CD	<0.60	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	9	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	18	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	8	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.08	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	28	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	62	MG/KG	04-25-1986

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 P.O. # +++++
DATE REP'D. 05-01-1986

LAB NO. 1930-86
CLIENT NO. F0003

SAMPLE LOCATION BORE C (5')
SAMPLER BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 13:40

R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL		COMMENTS:		
STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	76.8	%	04-25-1986
01027	CADMIUM, TOTAL, CD	0.73	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	8	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	17	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	8	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.11	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	23	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	87	MG/KG	04-25-1986

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302, 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 P.O. # +---++ LAB NO. 1931-86
DATE REP'D. 05-01-1986 SAMPLE LOCATION BORE C (10') CLIENT NO. F0003
SAMPLER BY MATT KNECHT DATE SAMPLED 04-23-1986
TIME SAMPLED 13:40

R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL		COMMENTS:		
STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	80.4	%	04-25-1986
01027	CADMIUM, TOTAL, CD	<0.70	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	9	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	18	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	7	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.11	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	27	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	53	MG/KG	04-25-1986

LABORATORY CERTIFICATION # 4053

SIGNED *Peter J. Gull*

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302, 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	P.O. #	+++++	LAB NO.	1932-86
DATE REP'D.	05-01-1986			CLIENT NO.	F0003
SAMPLE LOCATION	BORE C (15')			DATE SAMPLED	04-23-1986
SAMPLED BY	MATT KNECHT			TIME SAMPLED	13:40

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	82.7	%	04-25-1986
01027	CADMUM, TOTAL, CD	<0.64	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	9	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	20	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	7	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.10	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	29	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	62	MG/KG	04-25-1986

LABORATORY CERTIFICATION # 4053

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302, 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	P.O. #	+++++	LAB NO.	1933-86
DATE REP'D.	05-01-1986			CLIENT NO.	F0003
SAMPLE LOCATION	BORE D (5')			DATE SAMPLED	04-23-1986
SAMPLED BY	MATT KNECHT			TIME SAMPLED	14:30
R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL			COMMENTS:		
STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS	
00500	RESIDUE, TOTAL (TS)	81.4	%	04-25-1986	
01027	CADMIUM, TOTAL, CD	0.60	MG/KG	04-25-1986	
01034	CHROMIUM, TOTAL, CR	8	MG/KG	04-25-1986	
01042	COPPER, TOTAL, CU	20	MG/KG	04-25-1986	
01051	LEAD, TOTAL, PB	7	MG/KG	04-25-1986	
71900	MERCURY, TOTAL, HG	<0.09	MG/KG	05-01-1986	
01067	NICKEL, TOTAL, NI	27	MG/KG	04-25-1986	
01092	ZINC, TOTAL, ZN	82	MG/KG	04-25-1986	

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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 P.O. # +++++
DATE REP'D. 05-01-1986

LAB NO. 1934-86
CLIENT NO. F0003

SAMPLE LOCATION BORE D (10")
SAMPLED BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 14:30

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	82.6	%	04-25-1986
01027	CADMIUM, TOTAL, CD	0.60	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	5	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	23	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	5	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.07	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	21	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	78	MG/KG	04-25-1986

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LABORATORY ANALYSIS REPORT

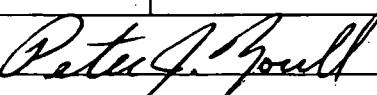
DATE REC'D.	04-24-1986	LAB NO.	1935-86
DATE REP'D.	05-01-1986	P.O. #	++++++
SAMPLE LOCATION	BORE D (15')	CLIENT NO.	F0003
SAMPLED BY	MATT KNECHT	DATE SAMPLED	04-23-1986
		TIME SAMPLED	14:30

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL, (TS)	81.7	%	04-25-1986
01027	CADMIUM, TOTAL, CD	0.60	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	5	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	21	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	6	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.09	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	19	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	96	MG/KG	04-25-1986

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LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	LAB NO.	1936-86
DATE REP'D.	05-01-1986	P.O. #	++++++
CLIENT NO.	F0003		
SAMPLE LOCATION	BORE E (5')	DATE SAMPLED	04-23-1986
SAMPLED BY	MATT KNECHT	TIME SAMPLED	15:40

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	81.3	%	04-25-1986
01027	CADMIUM, TOTAL, CD	0.70	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	8	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	23	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	11	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.09	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	28	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	96	MG/KG	04-25-1986

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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986
DATE REP'D. 05-01-1986

P.O. # +++++

LAB NO. 1937-B6
CLIENT NO. F0003

SAMPLE LOCATION BORE E (10')
SAMPLER BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 15:40

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00500	RESIDUE, TOTAL (TS)	80.4	%	04-25-1986
01027	CADMUM, TOTAL, CD	<0.70	MG/KG	04-25-1986
01034	CHROMIUM, TOTAL, CR	10	MG/KG	04-25-1986
01042	COPPER, TOTAL, CU	17	MG/KG	04-25-1986
01051	LEAD, TOTAL, PB	6	MG/KG	04-25-1986
71900	MERCURY, TOTAL, HG	<0.09	MG/KG	05-01-1986
01067	NICKEL, TOTAL, NI	17	MG/KG	04-25-1986
01092	ZINC, TOTAL, ZN	75	MG/KG	04-25-1986

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LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	P.O. #	+++++	LAB NO. CLIENT NO.	1938-86 F0003
SAMPLE LOCATION SAMPLED BY	BORE E (15') MATT KNECHT			DATE SAMPLED TIME SAMPLED	04-23-1986 15:40
R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL			COMMENTS:		
STORET	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS	
00500	RESIDUE, TOTAL (TS)	83.3	%	04-25-1986	
01027	CADMIUM, TOTAL, CD	0.60	MG/KG	04-25-1986	
01034	CHROMIUM, TOTAL, CR	3	MG/KG	04-25-1986	
01042	COPPER, TOTAL, CU	22	MG/KG	04-25-1986	
01051	LEAD, TOTAL, PB	8	MG/KG	04-25-1986	
71900	MERCURY, TOTAL, HG	<0.07	MG/KG	05-01-1986	
01067	NICKEL, TOTAL, NI	27	MG/KG	04-25-1986	
01092	ZINC, TOTAL, ZN	160	MG/KG	04-25-1986	

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ENCLOSURE 4

AQUA TECH ENVIRONMENTAL CONSULTANTS, INC.

FBA - AMERALE LANDFILL
 PRIORITY POLLUTANT VOLATILE FRACTION
 DATE SAMPLED -04/23/86

ATEC SAMPLE NO. CLIENT SAMPLE NO.	1924 A-5'	1926 A-15'	1927 B-5'	1928 B-10'	1929 B-15'	1930 C-5'	1931 C-10'
ACROLEIN	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
ACRYLONITRILE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
BENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
bis(CHLOROMETHYL) ETHER	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
BROMOFORM	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CARBON TETRACHLORIDE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROBENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
CHLORODIBROMOMETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROETHANE	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-CHLOROETHYL VINYL ETHER	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROFORM	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
DICHLORODIBROMOMETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
DICHLORODIFLUOROMETHANE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1-DICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-DICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-DICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-DICHLOROPROPANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
cis-1,3-DICHLOROPROPENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
trans-1,3-DICHLOROPROPENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
ETHYL BENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
METHYL BROMIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
METHYL CHLORIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
METHYLENE CHLORIDE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2,2-TETRACHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TETRACHLOROETHYLENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TOLUENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-DICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,1-TRICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2-TRICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TRICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TRICHLOROFLUOROMETHANE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
VINYL CHLORIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
TOTAL XYLENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

All results are mg/kg dry weight

AQUA TECH ENVIRONMENTAL CONSULTANTS, INC.

PAGE 2

FBA - AMERALE LANDFILL
PRIORITY POLLUTANT VOLATILE FRACTION
DATE SAMPLED -04/23/86

ATEC SAMPLE NO. CLIENT SAMPLE NO.	1932 C-15'	1933 D-5'	1934 D-10'	1935 D-15'	1936 E-5'	1937 E-10'	1938 E-15'
ACROLEIN	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
ACRYLONITRILE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
BENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
bis(CHLOROMETHYL) ETHER	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
BROMOFORM	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CARBON TETRACHLORIDE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROBENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
CHLORODIBROMOMETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROETHANE	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-CHLOROETHYL VINYL ETHER	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CHLOROFORM	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
DICHLORODIBROMOMETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
DICHLORODIFLUOROMETHANE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1-DICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-DICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-DICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-DICHLOROPROPANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
cis-1,3-DICHLOROPROPENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
trans-1,3-DICHLOROPROPENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
ETHYL BENZENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
METHYL BROMIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
METHYL CHLORIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
METHYLENE CHLORIDE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2,2-TETRACHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TETRACHLOROETHYLENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TOLUENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-DICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,1-TRICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,2-TRICHLOROETHANE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TRICHLOROETHYLENE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TRICHLOROFLUOROMETHANE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
VINYL CHLORIDE	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
TOTAL XYLENE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

All results are mg/kg dry weight

ENCLOSURE 5



AQUA TECH
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LABORATORY ANALYSIS REPORT

DATE REC'D. 04-24-1986 P.O. # +++++
DATE REP'D. 05-01-1986

LAB NO. 1921-86
CLIENT NO. F0003

SAMPLE LOCATION LEACHATE ALB601
SAMPLED BY MATT KNECHT

DATE SAMPLED 04-23-1986
TIME SAMPLED 16:40

R.J. ROBERTS
FLOYD BROWNE ASSOCIATES, LIMITED
181 S. MAIN ST.
MARION, OH 43302
JOB DESC.: AMERACE LANDFILL

COMMENTS:

STORE#	ANALYSIS	RESULT	UNITS	DATE OF ANALYSIS
00403	PH, LAB	6.6	S.U.	04-24-1986
00530	RESIDUE, T. NFLT. (SUSP)	910	MG/L	04-25-1986
01027	CADMIUM, TOTAL, CD	10	UG/L	04-25-1986
01034	CHROMIUM, TOTAL, CR	70	UG/L	04-25-1986
01042	COPPER, TOTAL, CU	100	UG/L	04-25-1986
01051	LEAD, TOTAL, PB	790	UG/L	04-25-1986
71900	MERCURY, TOTAL, HG	0.3	UG/L	05-01-1986
01067	NICKEL, TOTAL, NI	150	UG/L	04-25-1986
01092	ZINC, TOTAL, ZN	8900	UG/L	04-25-1986
00340	COD	390	MG/L	05-01-1986

LABORATORY CERTIFICATION # 4053

SIGNED Peter J. Gull

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P.O. Box 436, 181 South Main Street, Marion, Ohio 43302. 614-382-5991

LABORATORY ANALYSIS REPORT

DATE REC'D.	04-24-1986	P.O. #	+++++	LAB NO.	1923-86
DATE REP'D.	05-01-1986			CLIENT NO.	F0003
SAMPLE LOCATION	LEACHATE ALB603		DATE SAMPLED	04-23-1986	
SAMPLED BY	MATT KNECHT		TIME SAMPLED	17:30	
R.J. ROBERTS FLOYD BROWNE ASSOCIATES, LIMITED 181 S. MAIN ST. MARION, OH 43302 JOB DESC.: AMERACE LANDFILL			COMMENTS:		
STORE#	ANALYSIS		RESULT	UNITS	DATE OF ANALYSIS
00403	PH, LAB		6.6	S.U.	04-24-1986
00530	RESIDUE, T. NFLT. (SUSP)		544	MG/L	04-25-1986
01027	CADMIUM, TOTAL, CD		10	UG/L	04-25-1986
01034	CHROMIUM, TOTAL, CR		60	UG/L	04-25-1986
01042	COPPER, TOTAL, CU		100	UG/L	04-25-1986
01051	LEAD, TOTAL, PB		480	UG/L	04-25-1986
71900	MERCURY, TOTAL, HG		0.3	UG/L	05-01-1986
01067	NICKEL, TOTAL, NI		170	UG/L	04-25-1986
01092	ZINC, TOTAL, ZN		7450	UG/L	04-25-1986
00340	COD		330	MG/L	05-01-1986

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ENCLOSURE 6

AQUA TECH ENVIRONMENTAL CONSULTANTS, INC.

FBA - AMERALE LANDFILL
 PRIORITY POLLUTANT VOLATILE FRACTION
 DATE SAMPLED 4/23/86

ATEC SAMPLE NO.	10840	10841	10842
CLIENT SAMPLE NO.	AL8601	AL8602	AL8603
ACROLEIN	< 100	< 100	< 100
ACRYLONITRILE	< 100	< 100	< 100
BENZENE	< 1.0	< 1.0	< 1.0
BROMOFORM	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	< 0.5	< 0.5	< 0.5
CHLOROBENZENE	< 1.0	< 1.0	< 1.0
CHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5
CHLOROETHANE	< 1.0	< 1.0	< 1.0
2-CHLOROETHYL VINYL ETHER	< 1.0	< 1.0	< 1.0
CHLOROFORM	< 0.5	< 0.5	< 0.5
DICHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5
DICHLORODIFLUOROMETHANE	< 1.0	< 1.0	< 1.0
1,1-DICHLOROETHANE	10.3	1.2	4.1
1,2-DICHLOROETHANE	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHYLENE	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	< 1.0	< 1.0	< 1.0
cis-1,3-DICHLOROPROPENE	< 1.0	< 1.0	< 1.0
trans-1,3-DICHLOROPROPENE	< 1.0	< 1.0	< 1.0
METHYL BENZENE	< 1.0	< 1.0	< 1.0
METHYL BROMIDE	< 1.0	< 1.0	< 1.0
METHYL CHLORIDE	< 1.0	< 1.0	< 1.0
ETHYLENE CHLORIDE	< 1.0	< 1.0	< 1.0
1,1,2,2-TETRACHLOROETHANE	< 1.0	< 1.0	< 1.0
TETRACHLOROETHYLENE	< 0.5	< 0.5	< 0.5
TOLUENE	< 1.0	< 1.0	< 1.0
trans-1,2-DICHLOROETHYLENE	< 0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5
,1,2-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5
RICHLOROETHYLENE	< 0.5	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	< 1.0	< 1.0	< 1.0
VINYL CHLORIDE	< 1.0	< 1.0	< 1.0

ALL RESULTS EXPRESSED AS UG/L.